Brown bear status and threats in Darwaz, Northern Badakhshan, Afghanistan

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Abstract: The brown bear (*Ursus arctos*) is distributed throughout parts of northern and central Europe and Asia. Within Asia, its distribution extends to the northern, northeastern, and central Asian countries. In Afghanistan, brown bears are distributed in the northeastern parts including the Darwaz region, Badakhshan. However, the actual status and distribution of the species are not known in Afghanistan. We documented brown bears in Darwaz, where there have been no previous records confirming the presence of the species. Brown bear occurrence was confirmed through public reports during personal interviews, field evidence, and documentation of alleged bear depredation cases. Seventy-two percent of the informants stated that brown bears occur in Darwaz, and depredation complaints were recorded from 17 villages across the area. The highest numbers of complaints were from Nusai District. Cattle, especially bulls, were the major victims of alleged brown bear depredation in the region.

Key words: brown bear, cattle, Darwaz Region, depredation complaints, threats, *Ursus arctos*

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The brown bear (*Ursus arctos*) is distributed throughout parts of northern and central Europe and Asia. Within Asia, the brown bear occurs in Russia, China, Mongolia, Kyrgyzstan, Kazakhstan, Iraq, Tajikistan, Uzbekistan, Turkmenistan, Afghanistan, Pakistan, India, Nepal, Iran, Turkey, North Korea, and Japan. Across the southern portions of this range, brown bears are sparsely distributed and often isolated (Hassinger 1973, Nawaz 2007, Rigg et al. 2011; A.J. Sayer, 1981, National Park and Wildlife Management, Afghanistan, A contribution to a conservation strategy, Volume 1, Food and Agriculture Organization, United Nation Development Program, Rome, Italy; J. Mock, K. O'Neil, and I. Ali, 2008, Wildlife Conservation Society [WCS] Community Conservation Program in Wakhan, 2007 Annual Report, Kabul, Afghanistan).

Few wildlife studies have been made in recent years in Afghanistan, and so current status and distribution of the brown bear remains largely unknown in the country. A recent compilation of bear status through Asia (Japan Bear Network 2006) has chapters on most of the Asian countries, but makes no mention of the brown bear in Afghanistan. Servheen et al. (1999) only included the eastern part of Wakhan brown bear range in their distribution map. Griffith (1847) and Aitchison (1889) cited by Hassinger (1973) reported bears (species unknown) from Bamyan, Bala Morghab, and Maimana, but lack of more recent data suggest that they may no longer be present in these areas (Hassinger 1973).

Brown bears are known to remain in the Big Pamir (Z. Moheb, personal observations, 2007, 2008, 2010) and Little Pamir areas of Wakhan, Badakhshan Province (Sayer 1981 unpublished report, Habibi 2003, Mishra and Fitzherbert 2004; G.B. Schaller, 2004, The status of Marco Polo sheep in the Pamir Mountains of Afghanistan, WCS and National Geographic Society project report, New York, USA; S. Ostrowski, A.M. Rajabi, and H. Noori, 2007, Kirghiz and Wakhi livestock in Afghan Pamirs in 2007, WCS report, Kabul, Afghanistan; J. Winnie, and R. Harris, 2007, Marco Polo argali research in the Big Pamir Mountains of Afghanistan, Year-end Summary, WCS report, Kabul, Afghanistan; Mock et al. 2008, unpublished report). Habibi (2003) reported the source of the brown bear procured by the Kabul Zoo as Panjshir Province. Paludan (1949, cited by Habibi 2003), reported that the Third Danish Expedition found a skin of brown bear from Wana District, Nuristan. However, Stevens et al. (2011) documented no reliable information on the occurrence of brown bear during their survey in the eastern forests in Nuristan. In a recent questionnaire survey (S. Ostrowski, A.M. Rajabi, and H. Noori, 2008, Birds and mammals in Dasht-e Nawar, Afghanistan: occurrence and hunting pressure, 2007 surveys, WCS report, Kabul, Afghanistan) 3 of 49 respondents reported that brown bears had occurred

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during the previous 25 years in the Ko-e Baba range near Dasht-e Nawar, Ghazni Province. Their claims would constitute the western-most records of brown bear in the country. Despite being included in the distribution map given by Habibi (2003), there have been no records confirming the presence of the brown bear in northern Badakhshan Province, Afghanistan.

As part of the WCS Program "Improving Livelihoods and Governance through Natural Resource Management in Afghanistan" funded by the United States Agency for International Development, we conducted a reconnaissance survey in 3 districts of the Darwaz region of Badakhshan Province, which border Tajikistan to the north. Darwaz had been identified as a high priority for biodiversity conservation by the gap analysis performed by WCS in collaboration with the National Environment Protection Agency of the Afghan government in 2009 as part of the Program of Work on Protected Areas.

Study area

Although earlier considered a single administrative unit, Darwaz was divided into 5 administration units (districts) during the period of Mujahiddin in the 1990s. During our survey, we covered a strip of land (UTM zone 42 0617000 to 0671000) that fell under 3 Districts of Darwaz: Kof Ab, Shukai, and Nusai Districts (Fig. 1). Within this area, we sampled 38 villages, most of which were located in valleys that drain into the Amu Darya River. Topography of the area varies from steep slopes and cliffs to undulating terrain and flat areas. The steep slopes and cliffs become more dominant in the landscape in the western region of Amu Darya; this area is mostly scrubland, occupied by a variety of shrub and scattered tree species. To the south and southeast of our study area the elevation increases (1,100–3,300 m) from north to south, consisting of open grasslands and undulating terrain.

Methods

The survey was carried out during 19 September–17 October 2011. Most survey effort was spent meeting people, interviewing hunters and shepherds, and asking them what they knew about local wildlife. We inquired about the presence, status and threats of various species of large mammals including brown bear and Asiatic black bear (*Ursus thibetanus*). The village headmen and other elders, hunters, and shepherds were a particular focus because they were most likely to be more knowledgeable. We presented a photo gallery of large mammals that were known or suspected to have been historically distributed in the study area, including both bear species. Photos helped the interviewees identify species and avoid confusion during the interview. We interviewed 131 independent respondents in the 38 villages. Villages were selected on the topographic map throughout the survey area to obtain as even coverage as possible. Where villages occurred as clusters, we chose 1 or 2 villages located toward the periphery of the cluster, because we felt that people in such villages, being closer to unsettled areas, would have more knowledge of the wildlife of the area. Although the project was mostly designed as a community survey, the survey team did visit a few field sites proposed by local communities to have abundant wildlife.

Results

During the survey, we documented both field evidence and reports of bear depredation in Darwaz. Sixty-seven out of 131 respondents (51%) correctly identified brown bears when they were shown photos of both the bear species. Among the 131 interviewees, 94 people said that brown bear occur in Darwaz. Only 4 respondents claimed that the bear species occurring in Darwaz is the Asiatic black bear. In Lewgard Village, we observed a brown bear skin, which we estimated to have been collected <5 months earlier, and was alleged to come from the immediate area. The skin was being used as a prayer mat. If the skin were from the local area, this further supports information from respondents that brown bears were present in Darwaz.

We received reports of brown bear depredation from 17 of the Darwaz area villages, most of which occurred in a single valley and its surrounding areas in Nusai District (Fig. 1). We were also shown a bull reportedly wounded by a brown bear in Washnishahr Village (Fig. 1).

Threats to brown bears in Darwaz include retaliatory killings to reduce losses, a negative attitude of the local communities toward carnivores generally, and the availability of weapons among some villagers who hunt wildlife. Increases in the number of livestock may also contribute to the threats to bears in the area. According to respondents, many bears have been shot: however, these

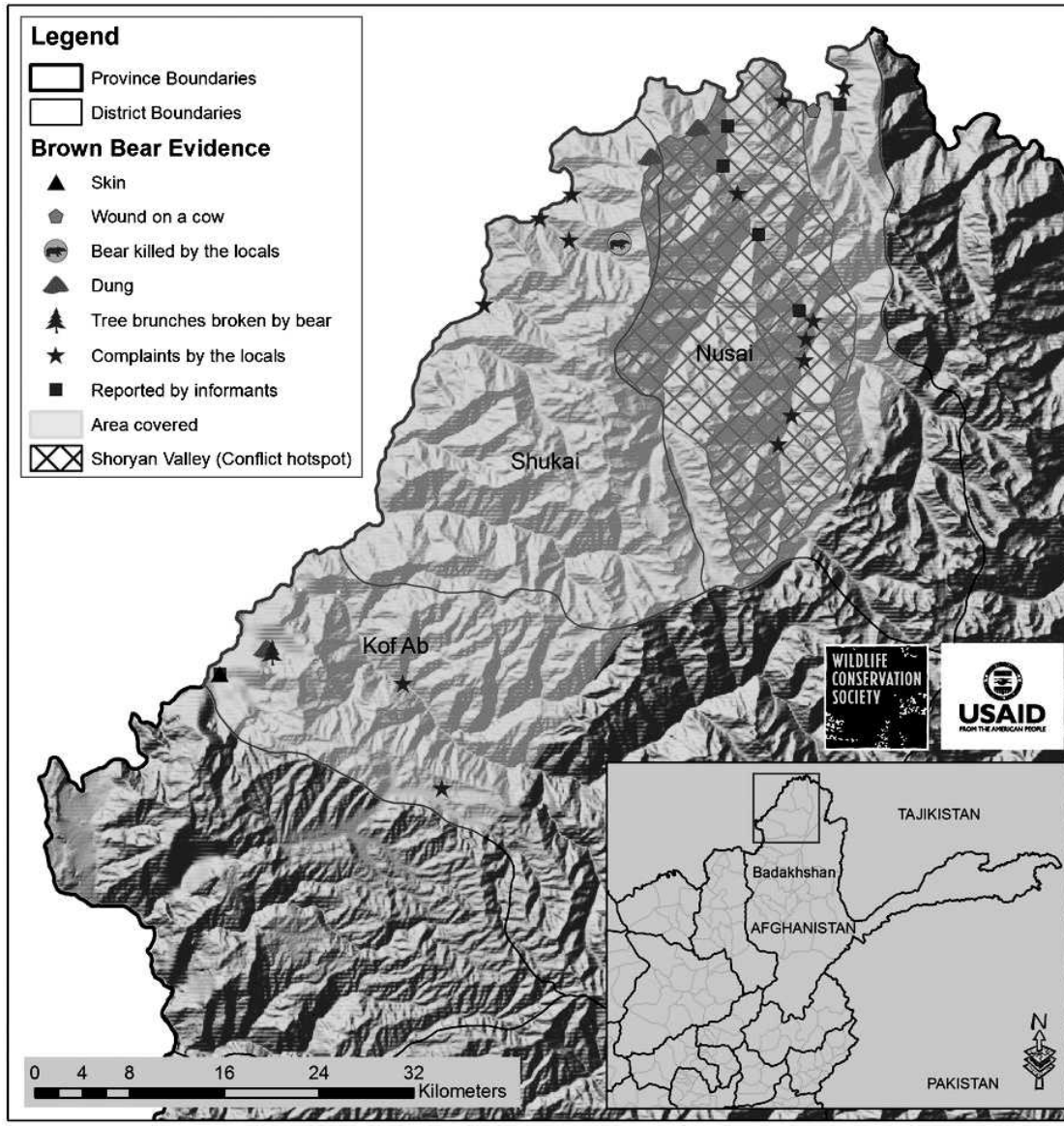

Fig. 1. Locations of brown bear evidence within the study area in Darwaz Region, northern Badakhshan, Afghanistan.

poachers do not appear to specifically target bears but kill them when they encounter them while searching for wild ungulates. For instance, a villager reported that he shot a male brown bear that was encountered during an ibex (*Capra sibirica*) hunt (Mohamad Aman, Lewgard Village, personal communication, 2011). According to respondents, during spring of 2011 several reports of depredations by a brown bear were made to the governor of Shukai District who gave orders to eliminate that individual bear. After a week, it was shot in the area between Khahdara and Shakhdara on the border of Shukai and Nusai districts (Fig. 1).

Discussion

Brown bears appeared to be widespread in the study area in Darwaz, with the local communities considering them very abundant, but empirical data on their population in the area is still lacking.

Further work would be required to elucidate brown bear distribution and abundance in the area.

Brown bears are not known to attack domestic animals in Wakhan District (S. Ostrowski, WCS, New York, USA, December 2011; and R. Harris, University of Montana, Missoula, Montana, USA, January 2012, personal communications). However, according to the Darwaz respondents, brown bears attack cattle, mostly bulls, in this region. This may be due to unsupervised grazing of bulls in the mountains. The increase in livestock depredation reports could be attributed to the consequent increase in livestock population in the recent past. Based on the information provided by the respondents, it seems that the Shoryan Valley (Fig. 1) in Nusai District is a conflict hotspot for the brown bear; there, it accounted for 59% of stock depredation cases. In the event of a domestic animal being attacked by bears or any other predator, the concerned villager makes enormous efforts to eliminate the predator. In Islamic culture the meat of carnivores is considered 'Haram' and may not be eaten (Nawaz 2007), but local people do use bear fat as a traditional medicine. They also use the bear's fur as a warm sleeping mat for people who have leg or back pain.

Because our survey was not fully dedicated to field visits and was mostly a community survey, we had little opportunity to visit field sites where we might have obtained direct evidence that could support detailed information about brown bears in the region. To secure the brown bear population, public awareness about wildlife and other natural resources would be the first step. Conservation of wild prey species may prevent the bears from attacking domestic stock so that retaliatory killings would be less frequent. Additional scientific investigation should help determine the distribution, population size, and specific threats to the species.

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